

AMENDMENT

Serial Number: 09/748,796

Filing Date: December 26, 2000

Title: Apparatus and Method for Pacing Mode Switching during Atrial Tachyarrhythmias

Page 2  
Dkt: 279.315US1

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method for operating a cardiac pacemaker, comprising:
- sensing atrial depolarizations through an atrial sensing channel and generating atrial sense signals in accordance therewith;
  - sensing ventricular depolarizations through one or more ventricular sensing channels and generating ventricular sense signals in accordance therewith;
  - pacing a ventricle in accordance with a particular primary pacing mode; and,
  - switching the pacemaker to an atrial fibrillation pacing mode upon detection of an atrial tachyarrhythmia, wherein the atrial fibrillation mode includes ventricular resynchronization pacing delivered in a biventricular inhibited demand mode with a selected biventricular offset interval.
2. (Original) The method of claim 1 wherein the pacemaker is normally operated in a primary pacing mode that includes atrial-triggered ventricular pacing, and wherein switching to an atrial fibrillation mode includes reverting to a non-atrial triggered ventricular pacing mode.
3. (Original) The method of claim 1 wherein the atrial fibrillation mode includes ventricular rate regularization.
- 4-6. (Cancelled)
7. (Currently amended) The method of claim 1 wherein the primary pacing mode includes ventricular resynchronization pacing and further wherein the ventricular resynchronization pacing in the primary pacing mode is different from the ventricular resynchronization pacing in the atrial fibrillation mode.

AMENDMENT

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Title: Apparatus and Method for Pacing Mode Switching during Atrial Tachyarrhythmias

Page 3  
Dkt: 279.315US1

<sup>5</sup>  
8. (Original) The method of claim 1 wherein the primary pacing mode that is switched from upon detection of an atrial tachyarrhythmia includes biventricular inhibited demand pacing and further wherein switching to the atrial fibrillation mode includes adjusting a biventricular offset interval.

<sup>6</sup>  
9. (Original) The method of claim 1 wherein the primary pacing mode that is switched from upon detection of an atrial tachyarrhythmia includes LV-only pacing and further wherein the atrial fibrillation mode includes biventricular inhibited demand pacing.

<sup>7</sup>  
10. (Original) The method of claim 1 wherein the primary pacing mode that is switched from upon detection of an atrial tachyarrhythmia includes biventricular triggered pacing and further wherein the atrial fibrillation mode includes biventricular inhibited demand pacing.

<sup>8</sup>  
11. (Original) The method of claim 1 wherein the primary pacing mode that is switched from upon detection of an atrial tachyarrhythmia includes rate-adaptive pacing and further wherein the atrial fibrillation mode includes an adjustment to a rate-adaptive parameter.

<sup>9</sup>  
12. (Original) The method of claim 1 wherein the primary pacing mode that is switched from upon detection of an atrial tachyarrhythmia is non-rate-adaptive and the atrial fibrillation mode is rate-adaptive.

13-27. (Cancelled)

<sup>10</sup>  
28. (Currently amended) A cardiac pacemaker, comprising:

an atrial sensing channel for sensing atrial depolarizations and generating atrial sense signals in accordance therewith;

~~right and left~~ one or more ventricular sensing channels for sensing ~~right and left~~ ventricular depolarizations and generating ventricular sense signals in accordance therewith;

right and left pacing channels for delivering paces to the right and left ventricles;

AMENDMENT

Serial Number: 09/748,796

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Title: Apparatus and Method for Pacing Mode Switching during Atrial Tachyarrhythmias

Page 4  
Dkt: 279.315US1

a controller for controlling the delivery of paces in accordance with a primary pacing mode; and,

wherein the controller is configured to switch the pacemaker to an atrial fibrillation pacing mode upon detection of an atrial tachyarrhythmia, wherein the atrial fibrillation pacing mode includes a ventricular resynchronization pacing mode delivered in a biventricular inhibited demand mode with a selected biventricular offset interval.

<sup>11</sup>  
~~29~~. (Original) The pacemaker of claim <sup>10</sup>~~28~~ wherein the primary pacing mode includes a ventricular resynchronization pacing mode different from that included in the atrial fibrillation pacing mode.

<sup>12</sup>  
~~30~~. (New) The pacemaker of claim <sup>10</sup>~~28~~ wherein the pacemaker is normally operated in a primary pacing mode that includes atrial-triggered ventricular pacing, and wherein switching to an atrial fibrillation mode includes reverting to a non-atrial triggered ventricular pacing mode.

<sup>13</sup>  
~~31~~. (New) The pacemaker of claim <sup>12</sup>~~30~~ wherein the primary pacing mode includes a ventricular resynchronization pacing mode different from that included in the atrial fibrillation pacing mode.

<sup>14</sup>  
~~32~~. (New) The pacemaker of claim <sup>12</sup>~~30~~ wherein the primary pacing mode that is switched from upon detection of an atrial tachyarrhythmia includes biventricular inhibited demand pacing and further wherein switching to the atrial fibrillation mode includes adjusting a biventricular offset interval.

<sup>15</sup>  
~~33~~. (New) The pacemaker of claim <sup>12</sup>~~30~~ wherein the primary pacing mode that is switched from upon detection of an atrial tachyarrhythmia includes LV-only pacing.

<sup>16</sup>  
~~34~~. (New) The pacemaker of claim <sup>10</sup>~~28~~ wherein the primary pacing mode that is switched from upon detection of an atrial tachyarrhythmia includes biventricular triggered pacing.

AMENDMENT

Serial Number: 09/748,796

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Title: Apparatus and Method for Pacing Mode Switching during Atrial Tachyarrhythmias

Page 5  
Dkt: 279.315051

<sup>17</sup>  
~~35~~. (New) The pacemaker of claim ~~28~~<sup>10</sup> wherein the primary pacing mode that is switched from upon detection of an atrial tachyarrhythmia includes rate-adaptive pacing and further wherein the atrial fibrillation mode includes an adjustment to a rate-adaptive parameter.

<sup>18</sup>  
~~36~~. (New) The pacemaker of claim ~~28~~<sup>10</sup> wherein the primary pacing mode that is switched from upon detection of an atrial tachyarrhythmia is non-rate-adaptive and the atrial fibrillation mode is rate-adaptive.

<sup>19</sup>  
~~37~~. (New) The pacemaker of claim ~~28~~<sup>10</sup> wherein the atrial fibrillation mode includes ventricular rate regularization.

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